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# ABSTRACTS

*This section of the* JOURNAL *is published in collaboration with the two abstracting Journals,* ABSTRACTS OF WORLD MEDICINE *and* OPHTHALMIC LITERATURE, *published by the British Medical Association. The abstracts are divided into the following sections:*

*Syphilis (Clinical, Therapy, Serology, Biological False Positive Phenomenon, Pathology, Experimental).*
*Gonorrhoea.*
*Non-Gonococcal Urethritis and Allied Conditions.*
*Reiter's Disease and Allied Conditions.*
*Antibiotics and Chemotherapy.*
*Public Health and Social Aspects.*
*Miscellaneous.*

*After each subsection of abstracts follows a list of articles that have been noted but not abstracted.*

## SYPHILIS (Clinical)

**Syphilitic Temporal Arteritis.** SMITH, J. L., ISRAEL, C. W., and HARNER, R. E. (1967). *Arch. Ophthal. (Chicago)*, **78**, 284, 10 figs, 7 refs.

A man aged 84 with typical temporal arteritis was found to have a positive serology and spirochaetes were identified in the temporal artery and aqueous fluid. Of nine other cases examined, four had specific blood reactions. *J. H. Kelsey*

**Unusual Cause of Charcot Joints in Early Adolescence (Riley-Day Syndrome).** BRUNT, P. W. (1967). *Brit. med. J.*, **4**, 277, 4 figs, 8 refs.

A 12-year-old girl with the Riley-Day syndrome is described in whom neuropathic joints developed.

*Barrie Jay*

**Another Case of Pulmonary Syphilis.** [In Czech.] HORAK, J. (1967). *Vnitrni Lek.*, **13**, 848. 10 refs.

**Cardiovascular Syphilis in a 20-year-old Male.** (Syphilis cardiovasculaire chez un jeune homme de 20 ans.) HILTENBRAND, C., MERLEN, J. F., and COTTEN, L. (1967). *Arch. Mal. Coeur*, **60**, 1041. 4 refs.

**A Case of Thrombosis of the Left Middle Cerebral Artery with Active Syphilis of the Vessel.** [In Polish.] KONOPKA, Z., ABRAMOWICZ, S., and ŁEBKOWSKI, J. (1967). *Przegl. derm.*, **54**, 343. 12 refs.

**Neurosyphilis associated with Haematemesis. Report of a Case.** VERBOV, J. L., CARTER, D. J., and WASTIE, M. L. (1967). *Brit. J. clin. Pract.*, **21**, 515. 3 figs, 6 refs.

**The Problem of Syphilis.** HAIM, S., and SHAFRIR, A. (1967). *Harefuah*, **73**, 168.

**Late Syphilis: A Review of Some of the Recent Literature.** NICHOLAS, L., and BEERMAN, H. (1967). *Amer. J. med Sci.*, **254**, 549. Bibl.

## SYPHILIS (Therapy)

**Management of Early Syphilis in Patients Reacting Adversely to Penicillin.** [In Polish.] BOWSZYC, J. (1967). *Przegl. derm.*, **54**, 585. 9 refs.

Of a total of over 300 patients with early syphilis treated at the Dermatological Clinic of the Gdańsk Medical Academy from 1960 to 1964, only three had an allergic reaction to penicillin; two had a transient skin rash a few days after the initial injection of 2·4 mega units benzathine penicillin, subsequent injections being well tolerated, and one had a severe urticarial eruption lasting 3 months after the second injection of benzathine penicillin (1·2 mega units) given 13 days after the initial dose of 2·4 mega units. In all three cases, pre-treatment intradermal tests with benzathine, procaine, and crystalline penicillin had been negative.

Four patients treated with daily injections of 600,000 units procaine penicillin had an immediate reaction (within seconds of injection) consisting of tinnitus, vertigo, metallic taste in the mouth, visual disorders (diplopia), psychomotor excitation, tongue stiffness, and paraesthesiae, followed by clouding or momentary loss of consciousness. The whole episode lasted 5 to 30 minutes, but for several hours up to a few days the patients complained of headache and general weakness. This reaction was regarded as non-allergic and was due to a rapid passage of procaine into the blood stream. In one patient, in whom the reaction occurred on the 30th day, treatment was discontinued. In the three others (in whom the reaction occurred on the 11th, 21st, and 23rd day respectively), treatment was continued, in one with crystalline penicillin and in two with procaine penicillin under steroid cover. Pre-treatment intradermal penicillin tests were negative in three and weakly positive in one of these four patients.

Eight patients with early syphilis were admitted to hospital for treatment because of positive pre-treatment intradermal penicillin tests or a previous history of adverse reaction to penicillin. All were treated with penicillin under steroid cover. Four had further skin or systemic reactions, but in all it was possible to complete treatment. Patients who had an anaphylactic

shock are discussed elsewhere (Bowszyc and Dziedzic, *Pol. Tyg. lek.*, in press). In such cases it is dangerous to give penicillin, even in a test dose, and a different antibiotic of proven efficacy should be given instead. All patients with early syphilis reacting adversely to penicillin should be treated in hospital.

[It is not clear why two of the three patients said to have had an allergic reaction were given further injections of benzathine penicillin, apparently without ill-effects, whereas it was thought necessary to provide steroid cover to two of the four patients who had a non-allergic reaction to procaine penicillin.] *L. Z. Oller*

**Investigations on the Disappearance of *Treponema pallida* from the Eruptions of Early Syphilis under the Influence of Various Antibiotics. The Influence of Oxytetracycline on *Treponema pallidum*** [In Polish.] SUCHANEK, J., CIECIERSKI, L. and ŁAWRYNOWICZ, R. (1967). *Pol. Tyg. lek.*, **22,** 1103.

**Faulty Treatment of Early Syphilis.** (Comment on maltraite une syphilis débutante ?) SOLENTE, G. (1967). *Presse méd.*, **75,** 1656.

## SYPHILIS (Serology)

**Comparison of Fluorescent and Conventional Darkfield Methods for the Detection of *Treponema pallidum* in Syphilitic Lesions.** JUE, R., PUFFER, J., WOOD, R. M., SCHOCHET, G., SMARTT, W. H., and KETTERER, W. A. (1967). *Amer. J. clin. path.*, **47,** 809. 6 refs.

This paper from the Microbial Diseases Laboratory of the California State Department of Public Health, Berkeley, reports a comparative study in which specimens from 241 patients with lesions suggestive of primary syphilis were examined for the presence of *Treponema pallidum* by the conventional dark-ground technique and by a fluorescent antibody method. In this, globulins from high-titred human syphilitic serum were conjugated with fluorescein isothiocyanate and the group treponemal antibody removed by absorption with Reiter treponemes, thus giving a reagent producing fluorescence only with *T. pallidum*. Smears taken in venereal disease clinics were air-dried and mailed to the laboratory, where they were heat-fixed, stored at room temperature, and examined within 2–7 days. The smears were exposed to a 1 in 10 dilution of the conjugate in a mixture of equal parts of 2 per cent. Tween 80 in buffered saline and normal human serum for 30 minutes at 37°C., washed in buffered saline, and examined by fluorescence microscopy using dark-ground illumination. Duplicate smears were examined in the clinic by dark-field microscopy.

*T. pallidum* was found by both methods in 38 of the 241 pairs of specimens, but discrepant results were found in twenty, fourteen of these were positive by fluorescence only and six by the conventional technique alone. Of the lesions giving discrepant results, seventeen were clinically typical primary chancres and three were atypical, smears from these being positive only by the fluorescence technique. 72 patients were examined more than once; four out of five patients whose smears were positive by fluorescence but negative by conventional examination on two occasions subsequently developed reactive VDRL tests; the fifth patient, whose smears were positive by the fluorescence technique at the first examination only, remained sero-negative.

Examination for *T. pallidum* by fluorescence microscopy is thought to be as reliable as by ordinary dark-ground microscopy. It may offer advantages in the examination of material from extragenital chancres in which saprophytic treponemes may cause confusion and also when facilities for immediate dark-ground examination are not available and specimens must be sent to a laboratory. *A. E. Wilkinson*

**Tests for Syphilis in Young Males: an Analysis of a Seven-year Series from a Central Military Hospital.** SALO, O. P., VUORIO, M., MUSTAKALLIO, K. K., and AHO, K. (1967). *Milit. Med.* **132,** 258. 3 figs, 9 refs.

During the period 1959–65 23,970 servicemen (average age 20 years) were treated at the Central Military Hospital in Helsinki, Finland, 11 per cent. of them for repiratory infections. Routine VDRL, Kahn, and Wassermann tests were performed on all patients and the TPI test was used as a control from 1962 onwards.

Positive reactions were observed in 175 cases (0·73 per cent.), 35 of which were considered to be due to syphilis; of these 35 cases seven were verified cases of congenital syphilis and thirteen were fresh infections. False positive reactions, especially with a negative VDRL and a positive Kahn reaction, were observed in 63 patients with repiratory infections and in 77 other patients; in 54 of these 77 cases the false positive reaction occurred during the first 2 months of service and was probably caused by smallpox inoculation. Even excluding reactions due to these causes the incidence of false positive reactions (0·2 per cent.) was higher in these military personnel than in the maternity health service in Helsinki [figures not quoted]. Possible explanations are given for this difference. *R. R. Willcox*

**Evaluation of the Plasmacrit Test for Use as a Screen Test for Syphilis in the Military.** BUSHBEE, C. E. (1967). *Milit. Med.*, **132,** 262. 13 refs.

The Plasmacrit (PCT) screening test for syphilis has been reported to be more rapidly performed, more sensitive, and cheaper than the conventional methods (Kahn, VDRL, and cardiolipin microflocculation—CMF). In order to see whether it would be suitable for routine use in military and other laboratories, two groups of subjects were selected for survey. The first group consisted of 512 airmen blood donors at Wilford Hall Hospital, Lackland, Texas, and the second of 488 patients attending the Venereal Disease Clinic, San Antonio. All subjects were screened for syphilis by means of the PCT, CMF, and VDRL tests, using the Reiter protein complement fixation (RPCF) test for confirmation.

Of the 512 blood donors eight were found to be reactive or weakly reactive to the PCT and nonreactive to the CMF tests, three were reactive to both these tests, and none to the RPCF test. Of the 488 patients attending the clinic 136 were either reactive or weakly reactive to one or more of the screening tests, and 43 of these were confirmed by the RPCF test. The PCT was positive in all these 43 cases, the CMF in forty cases, and the VDRL in only 38 cases.

From these results the author concludes that the Plasmacrit test is more sensitive than the others and suggests that is could be considered as an eventual replacement for the currently used screening tests for syphilis. *R. R. Willcox*

**Autoimmune Phenomena in Syphilitic Infection: Rheumatoid Factor and Cryoglobulins in Different Stages of Syphilis.** MUSTAKALLIO, K. K., LASSUS, A., and WAGER, O. (1967). *Int. Arch. Allergy*, **31**, 417. 1 fig., 34 refs.

Various autoimmune phenomena are known to occur in syphilis.

In this paper from the University Central Hospital and Aurora Hospital, Helsinki, the authors report their findings in sera from 261 consecutive patients with syphilis (early in 140 cases, latent in 92, tertiary in 15, and congenital in 14). Waaler-Rose and latex tests were used to detect rheumatoid (RA) factor, and cryoglobulins were estimated spectrophotometrically from the turbidity developing in sera which were separated at 37°C., cooled for 20 hr at 5°C., and then rewarmed at 37°C. for 1 hr [for further details the original paper should be consulted.]

RA factor was found in 27 (10·3 per cent.) of the sera; the results were positive with both tests in eleven cases, with the latex test alone in fourteen, and with the Waaler-Rose test alone in two. Two of the patients with RA factor had clinical rheumatoid disease. RA factor was evenly distributed among treated and untreated patients and among those at different stages of infection, except that it was not found in any of the sera from patients with congenital infection. The incidence was, however, related to age, RA factor being found in 2 per cent. of those aged 24 or less, in 16 per cent. of those aged 25–50, and in 22 per cent. of those aged 51 or more. In seropositive cases there was no correlation between the reactivities to the two RA-factor tests and those to six serological tests for syphilis.

Cryoglobulins were found in 39 (14·9 per cent.) of the sera, and in four of these RA factor was also present. The amount of cryoglobulin was related to the stage of infection, being greater in the clinically later cases and more frequently found in older patients. Three patients had symptoms possibly related to cryoglobulins: all were males with treated syphilis, of whom one had purpura, one chronic urticaria, and one nodular vasculitis. Cryoglobulins (and RA factor) were found equally often among treated and untreated patients. Specimens of cryoprecipitate from four sera were shown by immunoelectrophoresis to consist of both IgG and IgM.

The authors suggest that the autoimmune phenomena associated with syphilis should prompt a re-examination of the role that infection may play in triggering off the autoimmune diseases. *A. E. Wilkinson*

**Significance of the FTA Test in Primary Syphilis.** (Die Bedeutung des FTA-Tests für die Primärsyphilis.) MEYER-ROHN, J. (1967). *Z. Haut-u. Geschl-Kr.* **21**, 309. 3 refs.

At the University Skin Clinic, Hamburg-Eppendorf, repeated serological investigation of 53 patients with untreated primary syphilis showed that the specific antibodies on which the fluorescent treponemal antibody (FTA) test is based are the first to appear, followed next by reagins and last by immobilizing antibodies. It is concluded that the FTA test is of great value in the diagnosis of primary syphilis, especially when, for some reason, treponemes cannot be demonstrated in the syphilitic lesions. *G. W. Csonka*

**Correlation between the Quantitative FTA Test on Serum and the Qualitative FTA Test on Dried Blood.** (Correlazione fra F.T.A. test quantitativo su siero ed F.T.A. test qualitativo su sangue essicato.) SARTORIS, S., STRANI, G. F., and LEIGHEB, G. (1967). *Minerva derm.*, **42**, 14. 14 refs.

In this paper from the University of Turin, Italy, the author compares the value of the fluorescent treponemal antibody (FTA) test when performed on serum with its value when performed on dried blood taken on filter paper from a heel or finger stab. [For references the original paper should be consulted.] In the case of the dried blood tests the results were recorded on a scale from 0 to +++.

Good correlation was found between the results of the two techniques. Negative results by both methods were in mutual agreement; at serum titres of 150 the results on dried blood ranged from + to ++, at 450 from + to +++, while at serum titres of 1,350–12,000 the dried blood results were always +++. [The number of patients tested is not mentioned.] The authors suggest that the dried blood technique is valuable because of its simplicity and suitability for babies and young children, and that it might be used for population screening. *J. S. Cohen*

**The TPI Test and Blastic Transformation of Leucocytes *in vitro*.** (T.P.I.-test e trasformazione blastica dei linfociti in vitro.) SAPUPPO, A., CHIARENZA, A., and LAZZARO, C. (1967). *Minerva derm.*, **42**, 12. 8 refs.

Blastic transformation of lymphocytes occurs in the presence of phytohaemagglutinin and to a lesser extent in other circumstances, including the presence of *Treponema pallidum*. This paper from the University of Ferrara, Italy, describes a study undertaken to correlate the results of the TPI test with the blastic transformation of lymphocytes *in vitro*. Seventeen patients with syphilis and ten controls were studied; eight of the patients had negative serology apart from the TPI results, while nine

had totally negative serology with all tests, including the TPI, at the time of the study. The tests were performed by placing 1·5 ml. plasma in each of three tubes and adding 10 ml. TC Medium 199 Difco. The first tube contained plasma and medium only; to the second 0·05 ml. of phytohaemagglutinin was added, and to the third 0·5 ml. of a suspension of *T. pallidum*. The tubes were kept at 37°C. for 4–6 days; after processing and staining the deposit was examined for blastic transformation of the lymphocytes.

In all cases transformation in the tubes containing phytohaemagglutinin was almost complete (88–100 per cent.). The sera of the normal subjects and of the patients with totally negative serology showed no greater increase in the tubes containing *T. pallidum* than in the control tubes (0–1 per cent.), but the sera of the patients who had positive TPI results gave increased blastic transformation (24–36 per cent.) with *T. pallidum*.

The authors suggest that in some cases of early or treated syphilis in which all tests, including the TPI, give negative results blastic transformation might be sufficient to suggest the diagnosis. *J. S. Cohen*

**Application of the Automatic Kinetic Complement-Fixation Technique to Problems of Syphilitic Serology.** (Application de la technique cinétique automatique de fixation du complément aux problèmes de sérologie syphilitique.) VARGUES, R., GONTHIER, F., and MORAUD, B. (1967). *Ann. Derm. Syph. (Paris)*, **94**, 265. 2 figs, 9 refs.

**On Antibody Protein in Syphilitic Serum.** TSUNODA, K. (1967). *Nihon Univ. J. Med.*, **8**, 329. 14 figs, bibl.

**Parallel Researches on Modifications of Behaviour of Reiter's Treponeme *in vitro* and *Treponema pallidum in vivo*.** (Recherches parallèles sur les modifications du comportement du tréponème de Reiter (*in vitro*) et du tréponème pala (*in vivo*).) COLLART, P., POGGI, G., DUNOYER, M., and DUNOYER, F. (1967). *Proph. sanit. morale*, **39**, 215. Bibl.

**Fluorescent Treponemal Antibody Test on Absorbed Serum Diluted 1 in 5.** (Il test treponemico di fluorescenza (FTA) sul siero assorbito e diluto 1/5.) NINU, E. (1967). *Ann. Sclavo*, **9**, 472. 11 refs.

**Test for the Rapid Diagnosis of Syphilis (RPRC Test).** (Ein Test zur Lues-Schnellgiagnostik (RPRC-Test).) MÜLLER, P. (1967). *Dermatologica (Basel)*, **135**, 238. 5 refs.

**Reiter Protein Complement-fixation (RPCF) Test as a Serological Test for Syphilis: a Clinical Study.** [Monograph, in English.] FÖRSTRÖM, L. (1967). *Acta derm.-venereol. (Stockl.)*, **47**, Suppl. 59. Bibl.

**Early Primary Syphilis—a Fluorescent Test to replace Dark-ground Examination of Chancre Exudate.** GARNER, N. F. (1967). *Med. J. Aust.*, **2**, 199. 1 fig., 2 refs.

**Current Possibilities in the Sero-diagnosis of Congenital Syphilis.** (Les possibilités actuelles du diagnostic sérologique de la syphilis congénitale.) FRIBOURG-BLANC, A., and BOIS, E. (1967). *Rev. Pediat.*, **3**, 103. 3 figs, 6 refs.

**Status of Serological Testing for Congenital Syphilis.** HOFFMANN, F. D., and HERWEG, J. C. (1967). *J. Pediat.*, **71**, 686. 8 refs.

**Sero-diagnosis of Syphilis.** NICHOLAS, L. (1967). *Arch. Derm.*, **96**, 324.

## SYPHILIS (Pathology)

**Spirochaetes in the Aqueous Humour in Sero-negative Ocular Syphilis. Persistence after Penicillin Therapy.** SMITH, J. L., and ISRAEL, C. W., (1967). *Arch. Ophthal. (Chicago)*, **77**, 474. 6 figs, 9 refs.

A 23-year-old woman presented with bilateral neuroretinitis and anterior uveitis. This ran a protracted course whilst she was treated with systemic prednisone for one year. Towards the end of this period a reactive FTA-ABS test was found and spirochaetes were demonstrated in the aqueous fluid. She was then given over 9 mega units of benzathine penicillin. One month later spirochaetes were demonstrated again both on darkfield examination and by fluorescent antibody staining. *P. Rodin*

**Intra-ocular Treponemes in Treated Congenital Syphilis.** GOLDMAN, J. N., and GIRARD, K. F. (1967). *Arch. Ophthal. (Chicago)*, **78**, 47. 1 fig., 8 refs.

The cases of two 52-year-old women suffering from congenital syphilis with interstitial keratitis and deafness are reported. The Hinton test was reactive in each case, the VDRL weakly reactive in one and reactive in the other. TPI tests were negative but the FTA-ABS tests positive. Both patients had received prolonged treatment in the past with heavy metals and one had received 3·2 mega units of oral penicillin and local and systemic steroids recently. In each case treponemes were seen in the aqueous on darkfield examination and by fluorescent antibody staining. FTA-ABS tests with aqueous were negative in both cases. Both patients were re-treated with penicillin, one receiving 7·2 mega units benzathine penicillin during 3 days and the other a total of 4 mega units procaine penicillin intravenously during 24 hours. In each case treponemes could still be seen in the aqueous fluid on both darkfield examination and fluorescent antibody staining. *P. Rodin*

**Reiter Treponeme: a Review of the Literature.** [Monograph.] WALLACE, A. L., and HARRIS, A. (1967). *Bull. Wld Hlth Org.*, **36**, Suppl. 2. Bibl.

## SYPHILIS (Experimental)

**Differentiation between *T. pallidum* and *T. pentenue*.** (Méthode expérimentale de differentiation entre *Treponema pallidum* et *Treponema pentenue*.) VAISMAN, A., PARIS-HAMELIN, A., and DUNOYER, F. (1967). *Bull. Wld Hlth Org.*, **36**, 339. (see also *Proph. sanit. morale*, **39**, 234).

It was noted that hamsters inoculated with *Treponema pallidum* developed a clinically latent infection, but that infection with *Treponema pertenue* resulted in the production of marked cutaneous and mucosal lesions. Because the strains of *T. pallidum* (Nichols and Gand) had been maintained in animals for many years while the yaws treponemes had been recently isolated, the authors examined the response of hamsters to freshly isolated strains of *T. pallidum*.

Material from darkground-positive lesions from nine patients with early syphilis was inoculated into groups of five male hamsters by scarification of the inguinal region. The animals were observed for 6 months and then killed. TPI and FTA tests were performed on the blood, and material from the nose, rectum, and lymph nodes was examined for the presence of treponemes. Three rabbits were inoculated into the scrotum with a mixture of lymph node and spleen tissue. None of the hamsters developed clinical evidence of infection, but they became sero-positive, treponemes were demonstrable, and passage to rabbits produced syphilomata or chancres in the recipient animals and the TPI test became positive. The difference of the response of the hamster to infection with yaws and syphilis treponemes therefore seems to be well established. *A. E. Wilkinson*

[Reprinted from the *Bulletin of Hygiene*, by permission of the Editor.]

**Fluorescent Antibody Tissue Stain in Experimental Ocular Syphilis.** WELLS, J. A., and SMITH, J. L. (1967). *Arch. Ophthal. (Chicago)*, **77**, 530. 4 figs, 8 refs.

## GONORRHOEA

**Gonorrhoea among Prostitutes.** WREN, B. G. (1967). *Med. J. Aust.*, **1**, 847. 1 fig., 15 refs.

In Britain, Australia, and the USA, the incidence of gonorrhoea has markedly increased since 1956 and many attempts have been made to educate, investigate, and treat the groups of individuals most likely to transmit the infection. One such group consists of prostitutes, and in an attempt to obtain some accurate figures on the incidence of gonorrhoea in prostitutes all women attending the gynaecological clinic at the State Women's Reformatory, New South Wales, were examined. Between January and June, 1966, 276 women were investigated, 100 of whom were prostitutes and 43 vagrants.

The incidence of infections with *Neisseria gonorrhoeae* was more than ten times greater among the prostitutes than among the vagrants and the others. Prostitution was most common under the age of 25 years and half the prostitutes were under 21 years. Of the eighty women under 21 years of age, 48 were prostitutes and 27 of them were infected with gonorrhoea, fourteen were vagrants and two were infected, and eighteen were neither prostitutes nor vagrants and two were infected.

Initially treatment was effected by administering 1 mega unit procaine penicillin daily for 10 days, but four out of 32 patients continued to harbour *N. gonorrhoeae*. Because of this, patients are now treated with 2 mega units benzylpenicillin every 8 hours for 4 days, together with probenecid 2 g. twice daily for the same period. If necessary, this is followed by procaine penicillin for a further 6 days. There have been no failures with this regimen.

The author points out that if his figures are representative about one-half of all prostitutes are infected with gonorrhoea, and he considers that attempts to control the infection should include medical examination of all prostitutes. The disease should be treated in hospitals where adequate facilities for culture of the organisms exist. *Eric Dunlop*

**Diagnosis and Treatment of Gonorrhoea in the Female.** LUCAS, J. B., PRICE, E. V., THAYER, J. D., and SCHROETER, A. (1967). *New Engl. J. Med.*, **276**, 1454. 2 figs, 10 refs.

Writing from the National Communicable Disease Center, Atlanta, Georgia, the authors point out the various factors militating against successful control of gonorrhoea and stress the asymptomatic nature of the infection in females. They consider that the greatest need today is an efficient diagnostic technique. With this in mind five laboratories and seven clinics took part in a study aimed at evaluating the delayed fluorescent antibody technique. The study was in two phases: in the first phase the efficacy of this technique was compared with that of the conventional Thayer-Martin culture method. Female patients only were investigated and specimens were obtained from the urethra, cervix, and vagina. In the second phase ten treatment regimens were evaluated by follow-up tests using the same methods. These ten treatment schedules consisted of five using penicillin and five using other antibiotics including spectinomycin and tetracycline. A total of 1,318 females made up the series.

In the first phase of the study the Thayer-Martin cultures were positive in one or more specimens from 92·3 per cent. of the 1,318 patients studied; this compares with 93 per cent. positive delayed fluorescent antibody tests. Cervical specimens proved the most productive source of positive results with both procedures. In these pretreatment tests agreement between the two methods was 90 per cent. The authors' conclusion on this first phase is that for the primary diagnosis of gonorrhoea in the female the delayed fluorescent antibody technique compares favourably with the culture method and has the advantage of producing results earlier.

In the second phase four schedules of treatment only are evaluated, three using penicillin and one using spectinomycin. The best cure rate, 89·3 per cent. was obtained with a 4·8 mega unit dosage schedule employing both aqueous procaine penicillin and procaine penicillin

in oil; the spectinomycin schedule (4 g. intramuscularly) gave a cure rate of 82 per cent. In early follow-up testing (2–4 days after treatment) the agreement level between the 2 methods of diagnosis was much reduced. Positive fluorescent antibody tests in the presence of negative cultures were not generally reproducible (the possible reasons for this are discussed). Later in follow-up (13–21 days) there was an improvement in the agreement level between the two tests. The authors conclude from this second phase that the delayed fluorescent antibody test should not be used as a test of cure.

[This detailed paper should be consulted in the original.]

**Kanamycin in the Treatment of Gonorrhoea in Males.** WILKINSON, A. E., RACE, J. W., and CURTIS, F. R. (1967). *Postgrad. Med. J.*, **43**, Suppl. 68. 4 refs.

In this trial of kanamycin in the treatment of gonorrhoea in men, carried out at the Whitechapel Clinic, The London Hospital, three different dosage schemes were used: in the first 102 patients received a single intramuscular injection of 2 g., in the second 93 were given two separate injections, each of 1 g., in the course of a day, and in the third 88 patients received an injection of 1 g. on two successive days. The patients were unselected except that seamen, travellers, and lorry drivers were excluded (because of uncertainty of attendance), as were patients known to have had renal disease or to be suffering from deafness (because of the known toxic effects of the drug). Patients in whose urethral secretion gonococci were found within 7 days of treatment were regarded as failures; those who showed gonococci later than 7 days after treatment were held to have been re-infected. A considerable proportion of patients in all three groups failed to remain under observation [and these seem to have been included among those successfully treated]. By these criteria the failure rate with all three methods was 2–3 per cent. A single dose of 1 g. appeared to be inadequate because failure was recorded in six of 36 cases in which the patients failed to attend for a second injection. Of 341 patients treated (including the 36 who received only 1 g. and 22 additional patients who received kanamycin because penicillin and tetracycline were contraindicated) only six complained of transient local pain or soreness at the site of injection and one of feeling faint for a few minutes after injection. There were no other toxic manifestations. 29 patients had residual non-gonococcal urethritis after presumed cure of their gonorrhoea. The 22 patients known to be sensitized to penicillin or in whom tetracycline was contraindicated were successfully treated with 2 g. kanamycin without untoward effects; this dosage appeared to have no effect on the surface lesions of early syphilis in three cases.

The authors conclude that kanamycin in the dosage used is an effective remedy for gonorrhoea in males, but that in present circumstances its use should be restricted to patients sensitized to penicillin or those with suspected concomitant lesions of early syphilis. Gonococci isolated from 212 of the patients before treatment were tested for sensitivity to kanamycin and these strains showed a narrow range of sensitivity, from 0·39 to 3·125 μg./ml. Within this range failures of treatment were not correlated with differences in sensitivity. *A. J. King*

**Kanamycin in the Treatment of Gonorrhoea in Females.** HOOTON, W. F., and NICOL, C. S. (1967). *Postgrad. med. J.*, **43**, Suppl. 68. 4 refs.

A total of 186 female patients aged from 15 to over 40 years suffering from acute gonorrhoea who attended consecutively at St Thomas' Hospital, London, were treated with a single intramuscular injection of 2 g. kanamycin. Tests for residual infection were applied on the day following treatment and, as far as possible, 1, 2, 4, 8, and 12 weeks later, the absence of gonococci in smears and culture from sites of infection being held to establish success of the treatment. Of the 186 patients treated, 183 were tested on the day following treatment and the treatment was found to have failed in one case; 138 completed one month of observation and failure was noted in four cases; 74 continued under observation for 1–2 months and there were no addiitonal failures; 55 continued for 2–3 months and failure occurred in one case. It is, of course, evident that failure so defined is likely sometimes to result from re-infection and the fact that the cure rate in 138 patients observed for 1 month after treatment was 96·4 per cent. is held to demonstrate the efficacy of kanamycin in the treatment of acute gonorrhoea in females. Only three of the 186 patients reported ill-effects, the complaints being of severe local pain at the site of injection in two cases and mild syncope 30 minutes after injection in one case. Attention is drawn to the high cost of the drug compared with an equivalent therapeutic dose of penicillin. *A. J. King*

**Ophthalmia Neonatorum despite Crédé's Prophylaxis?** (Gonoblennorrhoea neonatorum trotz Credéscher Prophylaxe?) KOBER, P. (1967). *Med. Klin.*, **62**, 424. 10 refs.

This paper reports seventeen cases of gonococcal ophthalmia neonatorum diagnosed during the past 5 years at the Ophthalmological Clinic of the University of Kiel. These infections occurred despite the routine use of Crédé's prophylactic method, using 1 per cent. silver nitrate drops. Twelve of the cases were diagnosed by means of stained smears and cultures and the other five from the clinical findings and the time of onset of the symptoms and signs. Examination of the mother was positive in six cases, negative in five, and was not performed in six.

The author considers that there may be an increase in the incidence of gonococcal ophthalmia neonatorum in the future. He stresses the importance of examining stained smears and performing cultural tests to establish the aetiology of the condition and points out the disadvantages of treatment with antibiotics before an accurate diagnosis is established. Examination of the mother should not be forgotten. Treatment in the present series consisted of the instillation of Leukomycin (chloramphenicol) eye ointment into the conjunctival sac three times daily and the intramuscular administration of two

doses of 250,000 units penicillin. In all cases clinical cure was obtained in 3–4 days and was confirmed by the finding of three negative smears on three successive days after stopping treatment. The mothers were also treated with antibiotics.

The author concludes that in view of the current increase in the incidence of gonococcal ophthalmia neonatorum and of gonococcal infections in general there must be no question of abandoning routine Créde prophylaxis. *R. D. Catterall*

**Identification of *Neisseria gonorrhoeae* by Fluorescent Antibody Technique.** LIND, I. (1967). *Acta path. microbiol. scand.*, **70**, 613.

Antisera against *Neisseria gonorrhoeae* were prepared in rabbits and conjugated with fluorescein isothiocyanate. Cross-reactions were found with *Neisseria meningitidis*, *Neisseria catarrhalis*, *Neisseria flava*, *Neisseria subflava*, 10 per cent. of strains of *Staphylococcus aureus* (but not with *Staph. albus*), and *Streptococcus pyogenes*, Groups A, C, and D. Except for the reactions with meningococci, cross-reactions with the other organisms listed could be blocked by dilution of the conjugate in normal rabbit serum and this procedure was used to examine specimens from patients. Absorption of the conjugate with meningococci abolished reactivity with this species but diminished the staining of gonococci and was therefore not used.

Two methods of examination were used: "Direct FA" on specimens of secretions and "Delayed FA" on a film of growth from an overnight culture. In tests on material from the urethra, cervix, and rectum of 170 women, cultures were positive in 65 (112 sites) and the FA method in 67 (139 sites); the difference was most marked in rectal specimens from which seven positive cultures were obtained but 24 positive FA tests. In a further series of 171 specimens from 58 females, positive results were found by culture from 55 sites, by Gram-stained smears in 28, by direct FA in twenty sites, and by delayed FA in 52 sites. Because these comparisons had been made on a selected group, 821 swabs from routine specimens were plated, first for conventional cultures and then for delayed FA tests; this weighted the comparison against the FA method. From this material, cultures were positive in 198 instances and the delayed FA technique in 215.

It is concluded that the direct FA method does not offer any real advantage over Gram-stained smears, but the delayed FA test is considered reliable and time-saving and can give a 10–15 per cent. increase in positive findings over conventional cultural methods.

[The preparation and testing of reagents are described in detail; this paper will repay study by anyone wishing to try this promising technique.] *A. E. Wilkinson*

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**Evidence for Differing Mechanism of Antibacterial Activity of Sulfanilamide and Sulfadiazine against *Neisseria*.** SANDERS, E. (1967). *J. Lab. clin. Med.*, **70**, 662. 1 fig., 5 refs.

**Treatment of Gonorrheal Urethritis evaluated in 230 men.** BERRY, E. (1967). *J. Amer. med. Ass.*, **202**, 657. 16 refs.

**Gonococcal Skin Lesions.** GLICKSMAN, J. M., SHORT, D. H., KNOX, J. M., and FREEMAN, R. G. (1967). *Arch. Derm.*, **96**, 1.

**Isolation Rate and Antibiotic Sensitivity of Gonococci in Taiwan.** HO, T. J., and CHANG, S. S. (1967). *Far East med. J.*, **3**, 320, 10 refs.

**Large Doses of Penicillin for Treatment of Gonorrhoea in Women.** SHAPIRO, L. H., LENTZ, J. W., and MACVICAR, D. N. (1967). *Obstet. Gynec.*, **30**, 89.

## NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS

**Fluorescent Antibodies in Genital Candidiasis.** ROHATINER, J. J., and GRIMBLE, A. (1967). *J. Obstet. Gynaec. Brit. Cwlth*, **74**, 575. 28 refs.

The purpose of this study was to evaluate the fluorescent antibody test in genital infection with *Candida*. Sera were collected from twenty women (average age 24 years) with clinical evidence of vaginal candidiasis and seven male consorts of infected women and from a control group of 22 older women and thirteen men in whom it was not known whether there was any candidial infection, twelve young women and girls found not to be harbouring *Candida*, and twelve women who had been taking the contraceptive "pill" for a year or more. A known laboratory strain of *C. albicans* was used as antigen, the tested sera were diluted with buffered saline, and fluorescein-conjugated anti-human globulin was applied. The highest dilution of serum giving a complete ring of bright green fluorescence around all cells was taken as the titre of the serum. A titre of 1:32 was accepted as positive. In genital candidiasis the test was positive in 85 per cent. of cases, *viz.* in seventeen women (seven in high titres of 1:128–1:512) and in six men (two in high titres). In the control group the test was positive in low titres in eleven women (50 per cent.) and two men (10 per cent.) and in none of the twelve younger women or girls; it was positive in two (17 per cent.) of the "pill"-taking women. The authors conclude that "the association of clinical genital candidiasis with a high titre of antibodies seems to be highly significant though not absolute". The suggestion that oral contraceptives are amongst the factors responsible for the rising incidence of genital candidiasis in women has not been confirmed in this study. *L. Z. Oller*

**Chronic Mucocutaneous Candidiasis, Deficiency of Delayed Hypersensitivity, and Selective Local Antibody Defect.** CHILGREN, R. A., QUIE, P. G., MEUWISSEN, H. J., and HONG, R. (1967). *Lancet*, **2**, 688. Bibl.

[At the University of Minnesota College of Medical

Science, Minneapolis] three patients with chronic mucocutaneous candidiasis were found to have an immune defect consisting of inability to manifest delayed hypersensitivity to skin tests or to active sensitization with 2,4-dinitrofluorobenzene. Two of these patients demonstrated a selective defect in parotid-fluid IgA antibody directed against *Candida albicans*. The quantity and distribution of salivary immunoglobulins were normal. *In vitro* response of the patient's lymphocytes to both specific (*C. albicans*) and non-specific (phytohaemagglutinin) mitogenic stimulation was normal. In contrast, other patients with chronic mucocutaneous candidiasis manifested delayed hypersensitivity and demonstrated high levels of *C. albicans* specific IgA antibody in parotid fluid. This suggests that an immunological deficiency may account for some forms of chronic mucocutaneous candidiasis.

[*Authors' summary*]

**Kanamycin in Non-gonococcal Urethritis.** CSONKA, G. W. (1967). *Postgrad. med. J.*, **43**, Suppl. 63. 12 refs.

The commonest form of non-gonococcal urethritis appears to be sexually transmissible, but the cause is unknown. Treatment is sometimes ineffective and, because of spontaneous recovery and tendency to relapse in some cases, the value of remedies is hard to assess. The treatment of choice is usually considered to be a broad-spectrum antibiotic such as tetracycline. Since kanamycin has been reported to be effective in gonorrhoea the author of this paper treated 77 men with non-gonococcal urethritis at the Central Middlesex and St Mary's Hospitals, London, with this drug, sixty men receiving a single intramuscular injection of 2 g. and seventeen receiving four injections, each of 1 g. at intervals of 24 hours; 140 other men received tetracycline in a dosage of 250 mg. four times daily for 4 days. Response was considered satisfactory if there were no symptoms or urethral discharge and if the urine was clear 7–8 days after the start of treatment and remained so during a period of at least one month. Assessment was possible in 54 cases in the first group, fifteen in the second, and 125 in the third.

The conclusion was that kanamycin was less effective than tetracycline, giving satisfactory response in 67 per cent. of cases with both dosages compared with an 89 per cent. response to tetracycline. On the other hand, kanamycin was highly effective in the treatment of gonorrhoea when given as a single injection of 2 g. (31 cases), eliminating the gonococcus in all cases but leaving a residual non-gonococcal urethritis in four; with tetracycline (250 mg. four times daily for 4 days) there were four failures out of 52 and three cases of residual non-gonococcal urethritis: and with procaine penicillin (a single injection of 1·2 mega units) there were twelve failures out of 105, with 21 cases of residual non-gonococcal urethritis. The only side effect of kanamycin was pain at the site of injection in two cases.

The author concludes that tetracycline is the most effective preparation in the treatment of non-gonococcal urethritis and that kanamycin is most successful in gonorrhoea. *A. J. King*

***Trichomonas vaginalis* Urinary Infection in a Boy.** HARPER, J. R. (1967). *Proc. roy. Soc. Med.*, **60**, 897. 7 refs.

A boy aged 10 years with congenital urological abnormalities (absent left kidney, right hydronephrosis, and repaired hypospadias) had fever, rigors, and vomiting. The urine showed many white cells and trichomonads but was sterile on culture. His symptoms responded rapidly to metronidazole 100 mg. three times daily for 7 days after which the pyuria and trichomonads disappeared. The mother had recently had vaginal discharge and was thought to be the most likely source of infection. However, a single vaginal swab was negative for *Trichomonas vaginalis*. *P. Rodin*

***Trichomonas vaginalis* Infection in a Newborn Infant.** BLATTNER, R. J. (1967). *J. Pediat.*, **71**, 608.

***Trichomonas vaginalis:* Resistance to Metronidazole.** DIDDLE, A. W., (1967). *Amer. J. Obstet. Gynec.*, **98**, 583.

## REITER'S DISEASE AND ALLIED CONDITIONS

**Contribution to the Pathogenic Study of the Fiessinger-Leroy-Reiter.** (Contribution à l'étude de la pathogénie de la maladie de Fiessinger-Leroy-Reiter (F.L.R.).) KASTSIMANTIS, D. M. (1966). *Rev. Rhum.*, **33**, 118. 6 figs, 47 refs.

Sterile articular fluid of tuberculous arthritis was injected into rats. The signs of this experimental disease look very much like those of human F.L.R.; in the author's opinion, the experimental disease is an allergic one. *S. Vallon*

**Aetiopathogenic Considerations with regard to the Nosological Classification of the Urethro-Conjunctivo-Synovial Syndrome.** [In Rumanian.] NICOLAU, ST. GH., NOAGHEA, G., and HONTARU, M. (1966). *Derm.-vener. (Buc.)*, **11**, 385.

A case of the Fiessinger-Leroy-Reiter syndrome is presented. Papulo-pustular skin lesions and keratosis also occurred.

The probable viral, pararikettsial aetiology of the syndrome is discussed. *P. Vancea*

## ANTIBIOTICS AND CHEMOTHERAPY

**Neurotoxicity and "Massive" Intravenous Therapy with Penicillin: a Study of Possible Predisposing Factors.** SMITH, H., LERNER, P. I., and WEINSTEIN, L. (1967). *Arch. intern. Med.*, **120**, 47. 10 refs.

Penicillin given intravenously in very large doses will sometimes produce favourable results in "resistant" infections and infections by organisms that are not usually considered to be sensitive to the drug. However, convulsions sometimes occur in patients so treated and appear to be related to the high dosage used. To study

the possible factors predisposing to neurological disturbance the authors of the paper from the New England Medical Center Hospitals and Tufts University School of Medicine, Boston, have made a retrospective study of data relating to fifteen patients aged 1 month to 78 years who were given penicillin in high dosage intravenously, of whom eight (Group A) developed convulsions and seven (Group B) did not. The main findings were as follows.

| Group<br>No. of Patients | *A*<br>8 | *B*<br>7 |
|---|---|---|
| Dosage of benzylpenicillin (mega units/day) | 18–80* | 6–24 |
| Serum penicillin level (U/ml.) | Over 300 in 5/8 | Below 300 in 6/7<br>Below 7·8 in all 7 |
| Penicillin level in lumbar puncture CSF (U/ml.) | 12–61 | |
| Serum sodium level (mEq/l.) | 115–130 in 7/8 | Over 129 in 6, over 132 in 4/7 |
| No. with renal dysfunction | 4/8 | 1/7 |
| No. with meningitis | 3/8 | 5/7 |
| No. with CNS disease other than meningitis | 2 (1 choroid plexis tumour, 1 undefined) | 0 |

* Except for a 5-month-old infant who was given 6 and 12 mega units/day on separate occasions.

It is concluded that in patients who receive high doses of penicillin three factors contribute to the development of nervous symptoms:

(*a*) Excessive dosage leading to high serum and CSF levels of penicillin;

(*b*) Underlying disease of the CNS;

(*c*) Renal insufficiency.

A fourth factor, hyponatraemia, may also contribute, but its precise role is uncertain.

It was not possible to incriminate penicillin with certainty as the cause of the seizures in these patients, especially as some had had fits before treatment was started. However, the timing and course of events seemed to be "characteristic and reproducible", evidence of CNS hyperactivity starting some 24–48 hrs after commencement of treatment and disappearing within 12–24 hrs of its withdrawal. The most frequent manifestations were myoclonus of the face and extremities and hyperreflexia; in the more severe cases somnolence and even coma were present and generalized grand mal seizures developed occasionally. Even large doses of anticonvulsants were ineffective in controlling the hyperactivity while administration of penicillin continued.

It is noted that in three cases the concentrations of penicillin in ventricular and cisternal fluids were considerably higher than those in lumbar puncture fluid, suggesting that the latter may give a misleading idea of the concentration to which the brain is exposed. However, it would appear from the present findings that concentrations of penicillin in the lumbar puncture CSF of 10 U/ml. or over should be avoided.

Various precautions that should be taken in treating patients with high-dosage parenteral penicillin are discussed. *H. Summers*

**Lincomycin: Activity *in vitro* and Absorption and Excretion in Normal Young Men.** McCALL, C. E., STEIGBIGEL, N. H., and FINLAND, M. (1967). *Amer. J. med. Sci.*, **254**, 144. 2 figs, 41 refs.

## MISCELLANEOUS

**Behçet's Disease. Epithelial Intranuclear Inclusion Bodies in Smears from Hypopyon and Scrotal Ulcers.** MORTADA, A., and EL HIFNAWI, H. (1966). *Bull. ophthal. Soc. Egypt*, **59**, 337. 2 figs, 17 refs.

In two typical cases of Behçet's syndrome, hypopyon, and scrotal ulcers, smears stained by Giemsa showed epithelial intranuclear inclusion bodies of the same appearance, size, and staining properties as those found in smears from buccal and scrotal ulcers and hypopyon as those previously reported. [*Authors' Summary*]

**Lymphogranulomatosis in Pregnancy.** (Lymphogranulomatose und Schwangerschaft.) POLIWODA, H., STOLTE, H., VOTH, H., GOTHE, H. D., and KOSTERING, H. (1967). *Arch klin. Med.*, **213**, 255

**Lymphogranulomatosis of the Female Genitalia.** (Zur Lymphogranulomatosis des weiblichen Geburtsorgans.) DRABINA, F., PIECHURIA, J., and RYCHLIK, W. (1967). *Zbl. Gynäk.*, **89**, 946.

**Radiology of Nocturnal Priapism.** (Rontgenbestrahlung bei nichtleukamischem Priapismus.) ULRICH, H. (1967). *Med.Klin.*, **61**, 1388.

**Epididymitis in Relationship to Prostatectomy.** THOMAS, W. J. C. (1967). *Proc. roy. Soc. Med.*, **60**, 874.

**Balanitis Xerotica Obliterans: Effective Treatment with Topical and Sublesional Corticosteroids.** POYNTER, J. H., and LEVY, J. (1967). *Brit. J. Urol.*, **39**, 420.

**Cancroid Condylomata Acuminata of the Penis.** [In Polish.] BIENIAK, B., and PIETRASZUN, R. (1967). *Przegl. derm.*, **54**, 383. 1 fig., 3 refs.

**Advances in the Treatment of Venereal Diseases.** SCHOFIELD, C. B. S. (1967). *Practitioner*, **199**, 1192, 506.

**Considerations on the Failure to eradicate Gonorrhoea and Syphilis.** DANBOLT, N. (1967). *Triangle (En.)*, **8**, 2.